

## Science | Year 3/4 - Rocks | Autumn 2020-21

1. compare and group together different kinds of rocks on the basis of their appearance and simple physical properties
2. describe in simple terms how fossils are formed when things that have lived are trapped within rock
3. recognise that soils are made from rocks and organic matter

	Assessment guidance	Key learning	Key vocabulary
Rocks	Shows understanding of a concept using scientific vocabulary correctly	<p>Rock is a naturally occurring material. There are different types of rock e.g. sandstone, limestone, slate etc. which have different properties. Rocks can be hard or soft. They have different sizes of grain or crystal. They may absorb water. Rocks can be different shapes and sizes (stones, pebbles, boulders). Soils are made up of pieces of ground down rock which may be mixed with plant and animal material (organic matter). The type of rock, size of rock piece and the amount of organic matter affect the property of the soil.</p> <p>Some rocks contain fossils. Fossils were formed millions of years ago. When plants and animals died, they fell to the seabed. They became covered and squashed by other material. Over time the dissolving animal and plant matter is replaced by minerals from the water.</p>	<p>Rock, stone, pebble, boulder, grain, crystals, layers, texture, absorb water, soil, fossil, marble, chalk, granite, sandstone, slate, sediment, paleontologist</p>
	Applying knowledge in familiar related contexts, including a range of enquiries	<p>Observe rocks closely            Classify rocks in a range of ways based on their appearance            Devise a test to investigate the hardness of a range of rocks            Devise a test to investigate how much water different rocks absorb            Research using secondary sources how fossils are formed            Observe soils closely            Observe how soil can be separated through sedimentation            Research the work of Mary Anning</p>	

## Session sequence – Rocks

Session	Key learning	Activity
1	Observation of rocks and sorting	Sorting rocks using variety of different criteria (chosen by groups)How many different ways could they be sorted?
2	Close observation of properties of rocks	Look at rocks using hand lenses and record the properties of each type of rock. Were there any properties that were present in all rock samples? Any that were specific to one type?
3	Are all rocks as hard as each other? Permeable or impermeable? Do rocks react?	Plan as a class how to test to see if rocks are hard, permeable, reactionary and heavy. Groups then rotate around the 4 tests to find the outcomes.
4	How are rocks made? Sedimentary	Make a sedimentary sandwich – explaining how the rocks are formed.
5	How are rocks made? Metamorphic	Using a variety of chocolate make a sedimentary rock, then apply pressure and heat to change it into a metamorphic rock
6	How are rocks made? Igneous	Use chocolate chips to show the pieces of rock that are heated to magma and then cooled.
7	What is soil?	Examine soil samples using brushes and tweezers – what can they see?
8	What is in soil? Separating through sedimentation	Exploring different soil types through sedimentation. What happens?
9	What is a fossil? Work of Mary Anning	Look at how fossils are made – create a mould fossil using clay – explain the process of fossilisation.
10	What is a fossil? Cast fossils	Make a cast fossil using a mould and Plaster of Paris.